Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-16 (canceled).

Claim 17 (new): A device for discriminating nuclear fuels in an installation comprising a subjacent structure provided with storage cells immersed in a water filled bay, the device comprising a waterproof casing (2) containing a first detector (15) of a first radiation a second detector (16) of a second radiation, and the casing comprising means for attaching the casing to a boom and means for positioning the casing in a given position on a first one of the cells (5) that adjoins a second one of the cells that contains the nuclear fuel (26) which is discriminated, said means for positioning being provided at a base portion of the casing and penetrating in said first cell in a fitting manner.

Claim 18 (new): A device for discriminating nuclear fuels according to claim 17, whereby the second detectors is a gamma radiation detector located behind two collimators in continuation (25, 31; 32, 34), comprising a rear collimator, located just in front of the said second detector and opening up onto the whole detection area of a detection body, and a front collimator, with a slot section extended in a transversal direction of a fuel element, and the first detector is a neutron detector.

Claim 19 (new): A device for discriminating nuclear fuels according to claim

18, whereby the casing comprises a fixed part (36) bearing the means for attaching it, and a mobile part, (38), that pivots around the fixed part in such a way as to turn the slot a quarter turn or a half turn.

Claim 20 (new): A device for discriminating nuclear fuels according to claim 18, whereby the slot has a variable extension dimension and broadens out towards the fuel element.

Claim 21 (new): A device for discriminating a nuclear fuel in an installation comprising a subjacent structure provided with storage cells immersed in a water filled bay, the device comprising a waterproof casing containing a first detector of a first radiation and a second detector of a second radiation, and the casing comprising means for attaching the casing to a boom, means for positioning the casing in a given position on a first one of the cells that adjoins a second one of the cells that contains the nuclear fuel which is discriminated, the means for positioning being provided at a base portion of the casing and penetrating in the first cell in a fitting manner, and a shield of the second radiation, the shield comprising a thinner part in front of the first detector and a thicker part in front of the second detector and above the first detector, wherein the first detector is a neutron detector and the second detector is a gamma ray detector, and the thicker part of the shield comprises a front collimator extending towards the second detector and having a section which is elongated in a transversal direction of a fuel element.

Claim 22 (new): A device according to claim 21, wherein the second detector is surrounded by a shield comprising a rear collimator which is a conoidal having a base with a largest axis extending out in the transversal direction of the rod.

Claim 23 (new): A device according to claim 21, wherein the shield surrounding the second detector is slidably contained in the casing.